Division of Intramural Research

NAEHS Council Update

May 2004

Attachment B

DIR RECRUITMENTS

Senior Clinical Investigator
The Office of Clinical Research is recruiting a tenured, senior investigator to conduct clinical research in the general area of women's reproductive health. The person selected will be board certified or eligible in obstetrics and gynecology, and will conduct a clinical research program in some aspect of disorders of women's reproductive health. There is particular interest in the influence of environmental factors on malignant and non-malignant disorders of women's reproductive health; examples of possible topics for study include endometriosis, polycystic ovary syndrome, uterine fibroids, infertility of various types, premature ovarian failure, microchimerism, epigenetic disorders, cancer prevention and/or vaccines. Studies will be designed to help understand basic pathophysiology and aid in the development of new treatments for these conditions. The successful candidate will be expected to have an active clinical research program in his/her specific field of interest and to play an active role in the Gynecology Consult Service at the NIH Clinical Center in Bethesda. A search committee chaired by Dr. Darryl Zeldin, Laboratory of Respiratory Biology, has been formed.

Tenure-track Immunologist
The Laboratory of Respiratory Biology has conducted a national search for a cellular/molecular immunologist. The candidate will be expected to establish a high-quality independent research program in pulmonary immunology in a laboratory with diverse research interests and backgrounds. The successful candidate will have research strengths in, but not necessarily limited to, pulmonary biology (such as mechanisms of tolerance, allergy, adaptive and/or innate immune response to respiratory infections, etc). Dr. Farhad Imani, currently an Assistant Professor of Medicine at the Johns Hopkins University School of Medicine, has accepted this position.

Tenure-track Environmental Epidemiologist
The Epidemiology Branch has conducted a national search for an environmental epidemiologist. This person will be expected to develop an outstanding research program on the effects of environmental exposures and risks of chronic disease. Dr. Honglei Chen, currently an Instructor at the Harvard School of Public Health, has accepted this position.

Tenure-track or Tenured Biostatistician
The Biostatistics Branch has conducted an international search for a tenure-track or tenured statistician to conduct independent research on methods development in statistical genetics. The successful candidate will be expected to develop statistical methods for family-based studies aimed at identifying and mapping genes that influence risk modifying quantitative traits or diseases or that interact with the environmental agents that cause human disease. An offer has been extended to a the leading candidate.

Tenure-track Investigator - Embryonic Stem Cell Biology
The Laboratory of Molecular Carcinogenesis is conducting a national search for a Tenure-Track Investigator in embryonic stem cell biology with research strengths in, but not necessarily limited

to, development and epigenetics. The search committee, chaired by Dr. Jean Harry, Laboratory of Neurobiology, has recommended candidates.

Tenure-track Investigator - Cancer Biology
The Laboratory of Molecular Carcinogenesis is conducting a national search to recruit a Tenure-Track Investigator in cancer biologist with research strengths in, but not necessarily limited to, chromatin, transcription, and epigenetics. The search committee, chaired by Dr.Michael Resnick, Laboratory of Molecular Genetics, has recommended candidates.

Tenure-track Investigator—Endocrinology
The Laboratory of Reproductive and Developmental Toxicology is conducting a national search for a Tenure-Track Investigator in hypothalamic–pituitary–gonadal reproductive neuroendocrinology. The individual selected for this position will have a record of accomplishments in the field of mammalian reproductive neuroendocrinology, with a research emphasis on the regulation and function of the hypothalamic–pituitary–gonadal axis in reproduction. A search committee, chaired by Dr. Mariel Birnbaumer, Laboratory of Signal Transduction, has been formed.

Deputy Director, NTP Interagency Center for the Evaluation of Alternative Toxicological Methods
The Environmental Toxicology Program is recruiting a staff scientist to serve as Deputy Director of the National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods. The candidate will have responsibility for managing and overseeing external independent scientific peer review of new, revised, and alternative test methods submitted for evaluation by the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM). The incumbent will also work with the Director to manage and oversee all aspects of scientific and administrative activities within the Center, including validation studies, workshops and coordinate test method reviews and other relevant activities with the ICCVAM, appropriate ICCVAM Interagency Working Groups, and other national and international regulatory and research organizations. Priority will be given to applicants with demonstrated ability to foster effective scientific review and results, and who possess a level of managerial and executive ability to create an atmosphere for maximum creativity, productivity, and cooperation. The candidate should hold a veterinary or medical degree, or a doctoral degree in toxicology or a related field, and have demonstrated credentials in scientific review, the validation of standardized toxicological test methods, and an understanding of the principles of chemical safety evaluations necessary to support public health. A search committee, chaired by Dr. Michael Shelby, National Toxicology Program, is evaluating candidates.

Staff Scientist--Toxicologic Pathologist
The Laboratory of Experimental Pathology has conducted a national search for a toxicologic pathologist to provide support and peer review for the National Toxicology Program toxicity and carcinogencity studies and to provide support for NIEHS researchers. Dr. Gail Pearse, currently a Research Fellow in the Laboratory of Experimental Pathology, has accepted this position.

Staff Scientist—Toxicogenomics
The National Center for Toxicogenomics (NCT) of the National Institute of Environmental Health Sciences has conducted a national search for a Staff Scientist to lead a core facility to support a research program to direct the basic research applications of gene expression technologies within the NCT. The NCT is conducting an aggressive research program to apply genomic technology to

toxicology and to facilitate the identification of biomarkers of specific adverse effects of exposure to environmental agents including drugs, chemicals, and stressors. The activities of the Center will enable other investigators to probe the complexities of the mechanisms of normal genetic and metabolic pathways and to subsequently learn how diseases occur when these pathways malfunction. The search committee is chaired by Dr. Elizabeth Murphy, Laboratory of Signal Transduction. An offer has been extended to a leading candidate.

Staff Scientist--Epidemiology
The Epidemiology Branch of the NIEHS is seeking a staff scientist with interests in breast cancer, genetic susceptibility and biomarkers of exposure to be the project director for the Sisters Study, a large cohort study of genetic and environmental risk factors of breast cancer. Primary duties will include maintenance of a large specimen bank, oversight of data collection and fieldwork, data analysis and publication. The incumbent will serve as the interface among Branch, laboratory and contract support staff, will serve on the Steering Committee for the study, participate in priority setting for use of study data as well as collection of new data, and will conduct research using the cohort data. While the primary focus of the study is breast cancer, it will be possible to carry out research on other outcomes within the cohort. A search committee chaired by Dr. Barbara Davis, Acting Chief, Laboratory of Women's Health, is interviewing candidates.

Staff Scientist—Bioethics
The Office of Clinical Research has conducted a national search for a bioethicist to be involved with health policy research on the effectiveness of federal and Institutional Review Board regulations in addressing clinical studies and clinical genetics issues. The search committee is chaired by Dr. Ronald Mason, Laboratory of Pharmacology and Chemistry. An offer has been extended to a leading candidate.

Staff Scientist—Mass Spectrometry
The Laboratory of Structural Biology, Environmental Biology Program is seeking a Staff Scientist to serve as Head of the Protein Microcharacterization Facility and who will be responsible for the MALDI/MS, MALDI/MS/MS and capillary HPLC/ESI/MS/MS identification of proteins isolated by 1-D and/or 2-D gel electrophoresis, in-gel digestion, determination of sites of post-translational protein modifications, identification of sites of interactions in protein complexes by limited proteolysis, protein purification by LC, and use of affinity techniques combined with MS. Additional duties will include close interaction with Institute scientists serving as a mass spectrometry expert during the planning and execution of experiments, supervision of laboratory technicians, and providing training to Institute personnel in the interpretation of mass spectral data. A search committee chaired by Dr. Trevor Archer, Chief, Laboratory of Molecular Carcinogenesis, has been formed.

Dr. Leping Li
Biostatistics Branch

Dr. Leping Li joined the Biostatistics Branch in December, 2003, as a tenure-track principal investigator. Dr. Li was trained in medicinal chemistry (Ph.D. 1994, University of North Carolina at Chapel Hill). After graduation, Dr. Li worked with Drs. Thomas Darden (Laboratory of Structural Biology, NIEHS) and Lee Pedersen (UNC and Laboratory of Structural Biology, NIEHS) on molecular modeling. Three years ago, Dr. Li made the transition from molecular modeling to bioinformatics.

Dr. Li is pursuing two interrelated areas in bioinformatics, gene expression data analysis and promoter sequence data mining. Although, gene expression profiling study has provided valuable information about the expression changes of individual genes in response to environmental toxicants/stressors, investigators often face the challenges of making sense of the changes in a global prospective as the tools for integrating individual genes into functional pathways and networks remain undeveloped. Statistical/data mining approaches are urgently needed to make optimal use of these high-dimensional data. This need becomes greater as the size and complexity of genomics data are generated and biological questions to be addressed become more sophisticated. In collaboration with colleagues in the Biostatistics Branch, Dr. Li is developing computational methods for analysis of microarray data. In addition, Dr. Li is developing computational methods that combine the Gibbs sampling with phylogenetic footprinting techniques to search for cis-regulatory motifs in the promoter region of genes. The goal is to combine gene expression data and genomic sequence data to find meaningful relationship between sequence and function.

Selected Publications

Liu D, Umbach D, Peddada S, Li L, Crockett PW, Weinberg CR. A random-peroids model for expression of cell cycle genes. Proc. Natl. Acad. Sci. USA, in press.

Li L, Umbach DM, Terry P, Taylor JA. Application of the GA/KNN method to SELDI proteomics data. Bioinformatics, 2004.

Peddada SD, Lobenhofer EK, Li L, Afshari CA, Weinberg CR, Umbach D. Selecting and clustering genes using order restricted inference methodology with applications to time-course microarray data. Bioinformatics, 2003, 19, 834.

Li L, Weinberg CR, Darden TA, Pedersen LG. Gene selection for sample classification based on gene expression data: study of sensitivity to choice of parameters of the GA/KNN method. Bioinformatics, 2001, 17, 1131-1142.

Dr. Angela King-Herbert
Laboratory of Experimental Pathology Branch

Dr. Angela King-Herbert joined the Laboratory of Experimental Pathology Branch (LEP) of the Environmental Toxicology Program (ETP) at the NIEHS as the head of Laboratory Animal Management/Staff Scientist for the National Toxicology Program (NTP) in January 2004. Dr. King-Herbert received her DVM degree from Tuskegee University in 1984. After several years of practicing as a small animal clinician, she returned to North Carolina State University, where she completed a residency program in Laboratory Animal Medicine. Dr. King-Herbert served as Director of a centralized animal facility, the Biological Resources Facility, for the College of Agriculture and Life Sciences at NCSU, in addition to serving as an adjunct professor in the Department of Zoology. Upon leaving NCSU, she became the Attending Veterinarian and Manager of Animal Biology in the Inhalation Toxicology & Animal Biology Division of RJ Reynolds Tobacco Company.

At the NIEHS, Dr. King-Herbert is responsible for developing and managing a program to supply quality laboratory animals and experimental services to ETP. Dr. King-Herbert assists in the development and investigation of new animal models such as transgenic mice and establishes the supply of such animal models for evaluation of toxic and carcinogenic potential of chemicals. She also assists ETP researchers in experimental designs, selection of animal models and final data evaluation in support of ETP studies. Dr. King-Herbert will serve as Project Officer on contracts for rodent production, rodent disease monitoring, and rodent genetic monitoring.

Selected Publications

Hamm, T. E., A.P. King-Herbert, M. A. Vasbinder. **Toxicology in "The Laboratory Rat"**, American College of Laboratory Animal Medicine Series, Academic Press (submitted).

TRAINING AND MENTORING

NIEHS Ranks as Third-Best Institution for Postdoctoral Training

In a survey conduced by the journal *The Scientist,* the Division of Intramural Research (DIR) at NIEHS was ranked as the third best Institution in the United States for postdoctoral training. Results of the survey were published in the February 16, 2004 issue of the journal. The survey was based on over 3,500 usable responses from more than 48,000 invitations. Postdoctoral researchers were asked to assess their working conditions and environments by indicating their level of agreement with 45 criteria in 11 different areas and to indicate which factors were most important to them. The most important factors were: comprehensive collections of journals and books, scientific career preparation, high-quality research tools, smooth communication in the lab, quality research, supportive colleagues, well-maintained buildings, scientific mentoring from PIs and laboratory technical support.

Transition to Independent Position (TIP) Awards

The NIEHS TIP Award Program is designed for exceptionally talented new environmental health scientists in basic, clinical or population-based (epidemiology) research who have demonstrated outstanding scientific abilities during their training. The objective of the program is to provide a commitment of support for the most promising new investigators early in their career while they establish their independent research program in a research-intensive environment relevant to environmental health sciences. The TIP investigators are expected to design and pursue their non-mentored research projects independently in their areas of interest. It is anticipated that the successful applicant will use the award to establish an independent research program and obtain preliminary data that will be the basis for a future research application. Specifically, the TIP investigator is expected to use the preliminary data in the environmental health sciences as a basis for an investigator initiated research grant (R01) or equivalent to the National Institutes of Health (NIH) in an area of a science directly relevant to the mission of the NIEHS within the first 24 months after initiation of the award.

Dr. Daniel J. Tomso, from the Laboratory of Computational Biology and Risk Analysis, received a TIP Award in March 2004, based on his grant application "Detection of Polymorphic Xenobiotic Response Elements." His mentor is Dr. Douglas Bell, Laboratory of Computational Biology and Risk Analysis.

Kupper Dissertation Award

Brian Neelon, a predoctoral student in the Biostatistics Branch, won the "Kupper Dissertation Award" for the best paper published by a student in the University of North Carolina, Chapel Hill, Department of Biostatistics. The paper was: Dunson, D.B. and Neelon, B. (2003). Bayesian inference on order-constrained parameters in generalized linear models. Biometrics 59, 286-295. His mentor was Dr. David Dunson. Dr. Dunson also received a mentoring award from the UNC Department of Biostatistics.

2004 NIEHS/NTA Career Fair

The Seventh Annual NIEHS/NTA Career Fair was held on April 30, 2004 at the Sigma Xi Center, Research Triangle Park, NC. A career development workshop entitled "Advancing Your Career" was chaired by Dr. Beth Fisher, University of Pittsburgh, which was followed by panel discussions. Areas covered included large and small biotech, academia, science policy, science writing and grant

administration. Panel participants included Dr. William Schrader, Deputy Scientific Director, NIEHS; Dr. Ester Carballo-Jane, Research Fellow, Merck; Dr. Greg Falls, Manager, Investigative Toxicology and Pathology, Glaxo Smith Kline; Dr. Laura Healy, Veterinary Pathologist, Amgen; Dr. Ed Lobenhofer, Research Scientist, Paradigm Genetics; Dr. Vicki Burnette: Senior Informatics Scientist, OmniViz, Inc.; Dr. Gwen Spizz, Group Leader, Experimental Cancer Biology, Gene Network Sciences; Dr. Geraldine Hamilton, Director, Cell Products, Cellzdirect; Dr. George Stancel: Professor and Dean, Graduate School, University of Texas, Houston; Dr. Delores Grant, Assistant Professor, North Carolina Central University; Dr. Deborah Lycan, Associate Professor, Lewis and Clark College; Dr. Roni Kingsley, Associate Professor, University of Richmond; Dr. Conrad Mallia, Program Officer, NIAID, NIH; Dr. Dennis Lang, Deputy Director, Division of Extramural Research and Training, NIEHS; Dr. Julie Wilberding, Grants/Program Manager, Department of Defense; Dr. Nancy Sung, Senior Program Officer, Burroughs Wellcome Fund; Dr. Sheila Newton, Director, Office of Policy, Planning, and Evaluation, NIEHS; Dr. Albert Teich, Director, Science and Policy Programs, AAAS; Dr. Sharon Hrynkow, Acting Director, Fogerty International Center, NIH; Dr. Angela Eggleston, Editor, Nature; Mr. Allan Coukell; Dr. Evelyn Strauss.

There were more than 230 registered attendees from universities and research institutions in the Triangle Area and the rest of North Carolina. The NIEHS, Sigma Xi, the Burroughs Wellcome Fund, Biolink Life Sciences, and Kelly Scientific, cosponsored this event.

LABORATORY OF NEUROBIOLOGY

In March 2004 a new Laboratory of Neurobiology (LN) was formed at NIEHS in the Environmental Biology Program of the Division of Intramural Research around five existing investigators (Dr. David Armstrong, Dr. Perry Blackshear, Dr. Serena Dudek, Dr. Jean Harry, and Dr. Jerry Yakel) from the Laboratories of Molecular Toxicology and Signal Transduction who have expertise in neuronal and glial signaling at all levels of mammalian brain organization: from cells in vitro to behaving animals, particularly as it relates to cortical synaptic plasticity and inflammation. In addition two new tenure-track investigators are expected to be recruited in FY04-05.

The Laboratory mission is to investigate the cellular and molecular mechanisms that allow the nervous system to adapt to the environment. These mechanisms are examined within the framework of both normal and disrupted development and aging. Initial studies will focus on the molecular mechanisms regulating neuronal and glial cell development and function, and the cellular consequences of disrupting those processes. Neurobiology is an integral part of environmental health sciences. Disruption of neuronal development and function produces life-long effects on human cognitive potential. Consequently both early learning disabilities and later neurodegenerative diseases associated with aging have become major public health concerns. Because many of those neurological disorders show low concordance between monozygotic twins, such as attention-deficit hyperactivity disorder, Parkinson's and Alzheimer's diseases, environmental factors are implicated in their pathogenesis.

DIR AWARDS AND HONORS

Dr. Mariel Birnbaumer (Laboratory of Signal Transduction) was an invited Speaker at the Keystone Meeting on G Protein Coupled Receptors, Taos NM, February 17-21 2004; and was named Associate Editor of *Molecular Endocrinology*.

Dr. Colin Chignell (Laboratory of Pharmacology and Chemistry) was named to the editorial board of *Photochemistry and Photobiology*.

Dr. Michael Cunningham (Laboratory of Pharmacology and Chemistry) was invited to present the Plenary Lecture, "Gene Expression Changes in F344 Rats Following Exposure to a Pharmacological Dose of Acetaminophen" at the International Symposium on Molecular Toxicology and Environmental Health, November 5-8, 2003, Lucknow, India

Dr. Marilyn Diaz (Laboratory of Molecular Genetics) received the Presidential Early Career Award for Scientists and Engineers, from the Office of Science and Technology Policy at the White House, April 2004.

Dr. Thomas Eling (Laboratory of Molecular Carcinogenesis) received the 2003 Japanese Society for the Promotion of Science Travel Award.

Dr. Dori Germolec (Laboratory of Molecular Toxicology) received the Outstanding Young Investigator Award for the Immunotoxicology Specialty Section, from the Society of Toxicology, March 2004; and was named to the editorial board of *Toxicological Sciences*.

Dr. Joyce Goldstein (Laboratory of Pharmacology and Chemistry) was named Associate editor: *Journal of Biochemical and Molecular Toxicology*; and was named to the editorial board of *Drug Metabolism and Disposition*.

Dr. Michelle Hooth (Toxicology Operations Branch) was elected to the Education Committee of the Society of Toxicology, February, 2004; and became a Diplomat of the American Board of Toxicology, November 2003.

Dr. Kenneth Korach (Chief, Laboratory of Reproductive and Developmental Toxicology) was awarded the Transatlantic Medal from the British Endocrine Society; was Keynote speaker at the Yale Center for Musculoskeletal Disorders Research Day, Yale University Medical School, New Haven, Connecticut; and was Keynote speaker at the 5th Japan Conference on Hormones and Cancer, Osaka.

Dr. Stephanie London (Epidemiology Branch and Laboratory of Respiratory Biology) was elected to the Executive Committee, Environmental and Occupational Health Section, American Thoracic Society.

Dr. Jeanelle Martinez (Laboratory of Computational Biology and Risk Analysis) won the North Carolina SOT President's Award for Research Competition at the Fall NCSOT meeting.

Dr. David S. Miller (Laboratory of Pharmacology and Chemistry) was named Associate editor of the *Journal of Pharmacology and Experimental Therapeutics* and the *Journal of Experimental Zoology*.

Dr. Yuji Mishina (Laboratory of Reproductive and Developmental Toxicology) was invited as a keynote speaker at the 5th international conference on Bone Morphogenetic Proteins, September, 2004.

Dr. Jingbo Pi (National Toxicology Program and NCI at the NIEHS) received the SOT Carcinogenesis Specialty Section Postgraduate Fellowship Award for 2004.

Dr. James W. Putney (Laboratory of Signal Transduction) will give the annual Newton-Abraham Lecture in Medical and Chemical Sciences at Oxford, England, Spring 2004.

Dr. Melissa Rhodes (Toxicology Operations Branch) has been selected by the American Association for Cancer Research to attend the Edward A. Smuckler Memorial *Pathology of Cancer* Workshop in Aspen. This workshop provides an intense, one-week course on the

molecular and morphologic aspects of human cancer for scientists working basic cancer research.

Dr. Nigel Walker (Laboratory of Computational Biology and Risk Analysis) is President-elect of the North Carolina SOT (NCSOT) for 2004.

Dr. Allen Wilcox (Epidemiology Branch) has been invited to give the keynote address at the 19th International Symposium on Epidemiology in Occupational Health, to take place in Norway in September 2005.

INTERNATIONAL ACTIVITIES IN THE DIR 2003

Dr. Kamel Abdo (Toxicology Operations Branch) has a collaboration with scientists at the Center for Environmental and Occupational Health Sciences, Birzeit University, Ramallah, Palestine to determine indices of nutritional status of children; and with scientists at the Department of Community, and Occupational Medicine, Ain Shams University, Cairo, Egypt, to investigate the association between pesticide use in Egypt and occurrence of different cancers among Egyptians.

Dr. Trevor Archer (Chief, Laboratory of Molecular Carcinogenesis) has collaborative research projects with scientists at the Child Health Research Institute, University of Western Ontario, London, Ontario, Canada to perform a functional analysis of CpG methylation in the BRCA1 promoter region.

Dr. David Armstrong (Acting Chief, Laboratory of Neurobiology) has a collaboration with scientists in the Department of Physiology at the University of Edinburgh to study the structural basis for potassium channel regulation by the cAMP-dependent protein kinase.

Dr. Donna Baird (Epidemiology Branch) in collaboration with researchers at the Finish Institute of Occupational Health, Helsinki, Finland, to study changes in fecundability over time and fertility affects of solvent exposure and pesticide exposure among men and women in the Agricultural Health Study.

Dr. Douglas Bell (Laboratory of Computational Biology and Risk Analysis) was an invited symposium speaker, at the 4th International Conference on Environmental Mutagens in Human Populations, Florianopolis, Brazil, May 2003.

Dr. Perry Blackshear (Director, Office of Clinical Research and Laboratory of Neurobiology) has collaborations with scientists at McGill University, Montreal, Canada to study genetic modifiers of insulin action with PHAS-I knockout mice (which were developed at the NIEHS); with scientists at the Institute of Immunology, Biomedical Sciences Research Center 'Alexander Fleming', Vari, Greece to study interactions between TTP knockout mice and TNF and TNF receptor knockout and knock-in mouse lines; with scientists at the Institute of Clinical Biochemistry and Pathobiochemistry, Medical University Clinic, Würzburg, Germany to study P38 kinase – TTP interactions using TTP knockout mice (which were developed at the NIEHS); with scientists at the University of Manchester, UK to resequence the promoter and exons of the ZFP36 gene, encoding TTP, in University of Manchester population of patients with well-characterized forms of juvenile rheumatoid arthritis; at the University of Udine, Italy to resequence the promoter and exons of the ZFP36 from patients with rheumatoid arthritis who either responded or didn't respond to anti-TNF therapy; with scientists at the University of Zurich, Switzerland to study interstitial cell MARCKS and MLP expression in the normal kidney and in kidneys of mice with fibroproliferative diseases; with scientists in the Department of Applied Biochemistry and Biology, Faculty of Agronomy, Gembloux, Belgium to study interactions between bovine leukemia virus, HTLV, and TTP in the pathogenesis of bovine leukemia; with scientists in the Division for Immunology, Zurich University, Switzerland to evaluate TTP and TNF mRNA kinetics and responses in farm children exposed to low or high endotoxin levels; with scientists in the Department of Molecular Genetics, The Weizmann Institute of Science, Rehovot, Israel to work on MARCKS and MLP in animal models of lissencephaly syndromes; with scientists in the Department of Veterinary Microbiology,

University of Saskatachewan, Saskatoon, Canada to work on *Trypanosoma congolense* infections in TTP deficient mice; with scientists at the University of British Columbia, Canada to evaluate telomere length in mice deficient in a RECQL helicase, which may have a cancer-susceptible phenotype; with scientists at the Zentrum für Molekulare Neurobiologie, Universität Hamburg, Germany to study MARCKS interacting proteins and peripheral nerve migration; and with scientists in the Department of Pathology, Yonsei University, College of Medicine, Seoul, Korea to work on mononucleotide repeats in MARCKS sequences in colon cancer. Dr. Blackshear also has a Cooperative Research and Development Agreement with Oxford Glycosciences, Abingdon, UK to look at proteomics modifications in diabetes as indicators of disease status and status of complications.

Dr. Colin Chignell (Laboratory of Pharmacology and Chemistry) has a collaboration with scientists at the Department of Pharmacy, University of Sydney, Sydney, Australia, to study the mechanism of phototoxicity of Lamotrigine (3,5-diamino-6-(2,3-dichlorophenyl)-1,2,4-triazine), a new anticonvulsant and antidepressant drug.

Dr. Glinda Cooper (Epidemiology Branch) is currently serving on the World Health Organization International Program on Chemical Safety (IPCS) Task Group to compose the Environmental Health Criteria "Scientific Principles and Methods for Assessing Autoimmunity Associated with Exposure to Chemicals." Dr. Cooper is collaborating with scientists in the University Health Network, Toronto, Canada, to study genetic and environmental factors involved in the development of systemic lupus erythematosus (SLE).

Dr. William Copleand (Laboratory of Molecular Genetics) is collaborating with scientists at the Unit of Molecular Neurogenetics, National Neurological Institute "Carlo Besta," Milan, Italy, to study the consequences of mutations in the gene for the human mitochondrial DNA polymerase that cause progressive external ophthalmoplegia.

Theodora Devereux (Laboratory of Molecular Carcinogenesis) has a collaboration with scientists from Queens University, Kingston, Ontario, Canada to study global expression changes in sets of mouse lung tumor cell lines with different invasiveness based on movement through Matrigel.

Dr. Richard DiAugustine (Laboratory of Molecular Carcinogenesis) was an invited speaker at the Fourth International Symposium on Hormonal Carcinogenesis,
Valencia, Spain, June 21-25, 2003.

Dr. John Drake (Chief, Laboratory of Molecular Genetics) is serving as the DHHS mentor and a collaborator with scientists in Tbilisi, Georgia at the G. Eliava Institute of Bacteriophages, Microbiology and Virology. This is a Biotechnology Engagement Program (BTEP) project entitled "Study of Phage-Specific "Killer" Proteins" to understand just how bacteriophages used as antibiotics kill at the molecular level. He also has a collaborative research program with scientists at the Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw investigating the structural basis of DNA polymerase fidelity and serves on the Executive Board of the International Genetics Federation, an umbrella organization of numerous national genetics societies.

Dr. David Dunson (Biostatistics Branch) has a collaboration with scientists in the Department of Statistics, University of Padua, Italy; Department of Applied Statistics and Economics, University

of Pavia, Pavia, Italy; Service de Biostatistiques, Centre Hospitalo-Universitaire, Lyon, France; and Department of Gynecological Endocrinology and Reproductive Medicine, Staedtische, Kliniken Duesseldorf, Germany; to study the role of cervical mucus associated with decline in fertility during aging in humans.

Dr. E. Mitch Eddy (Laboratory of Reproductive and Developmental Toxicology) served as an external examiner for grant applications to the National Health and Medical Research Council, Australia; and was the co-organizer of the16th Congress of the International Federation of Associations of Anatomists, Kyoto, Japan. Dr. Eddy has collaborations with researchers in the Department of Life Sciences, Kwangju Institute of Science and Technology (K-JIST), Kwangju, Korea to produce a conditional mutant for protamine 2; with scientists in the Department of Embryology, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel to express and localize calpain-1, -2, and –11 in spermatogenic cells; with scientists at the Instituto de Biologia y Medicina Experimental, Buenos Aires, Argentina to produce a targeted mutation of the gene encoding epididymal protein DE; with scientists at the Monash Institute of Reproduction and Development, Monash University, Clayton, Victoria, Australia to study genetics of human male infertility; with scientists in the Laboratory of Experimental Animals, Department of Molecular Biology and Immunology, National Institute of Agrobiological Sciences, Tsukuba, Japan to study regulation of expression of genes essential for male fertility.

Dr. John French (Laboratory of Molecular Toxicology) has a collaborations with scientists in the Laboratory of Carcinogenesis and Mutagenesis, The Netherlands National Institute of the Environment and Public Health, Bilthoeven, The Netherlands to study the Mechanisms of DNA Damage and Repair in XPA and XPC deficient mice haploinsufficient in the p53 tumor suppressor gene. Dr. French also organized and chaired an international symposium entitled Alternatives to Carcinogenicity Testing using Genetically Altered Rodent Models for Carcinogen Identification and Mechanism of Action held in Washington, DC, on November 3, 2003.

Dr. Dori Germolec (Laboratory of Molecular Toxicology) is currently serving on the World Health Organization International Program on Chemical Safety (IPCS) Task Group to compose the Environmental Health Criteria "Scientific Principles and Methods for Assessing Autoimmunity Associated with Exposure to Chemicals."

Dr. Beth Gladen (Biostatistics Branch) has collaborations with investigators at the Institute of Pediatrics, Obstetrics, and Gynecology, Kyiv, Ukraine; the National Medical University, Kyiv, Ukraine; Kyiv Medical Academy of Post-Diploma Education, Kyiv, Ukraine, and the University of Bristol, Bristol, UK to examine pollution and reproductive outcomes in two cities in Ukraine; with scientists at Health Canada, Ottawa, Canada to examine patterns of exposure to different polychlorinated biphenyl congeners in milk samples collected from women across Canada in 1992 in order to determine whether health effects of different congeners could be examined separately; with scientists at the Institut National de Sante Publique de Quebec in Sainte-Foy, Canada; and the Instituto Nacional de Salud Pública, Cuernavaca, México to study effects of DDT on anogenital distance in newborn boys and early menopause in women.

Dr. Traci M.T. Hall (Laboratory of Structural Biology) has a collaboration with scientists at the Agricultural Biotechnology Center, Plant Biology Institute in Gödöllõ, Hungary to determine the three-dimensional structures of plant viral proteins that suppress post-transcriptional gene silencing.

Dr. Jean Harry (Laboratory of Neurobiology) was a member of the WHO working group, Principles and Methods for the Risk Assessment of Chemicals in Food, Joint Food and Additatives Organization, to update the document of the Food Additive Organization (FAO)/WHO: Principles and Methods for the Risk Assessment of Chemicals In Food, December, 2002; and a member of the External Steering Committee on Aluminum and Animal Neurotoxicity, Health Canada, Ottawa, Canada, to help with the development of a study design to assess the potential for dietary consumption of aluminum in the drinking water and in food to produce deficits in cognitive dysfunction in an aged population, April 2003.

Dr. William Jameson (National Toxicology Program) was the National Toxicology Program representative at the International Agency for Research on Cancer (IARC) Working Group meeting in Lyon, France in February to review nominations to the IARC and provided guidance on prioritizing these nominations for future IARC Monograph evaluations. The reviews and evaluations of this Advisory Group resulted in the publication of the IARC Monograph *Report of an Ad-Hoc Monographs Advisory Group on Priorities for Future Evaluations*.

Dr. Anton Jetten (Laboratory of Respiratory Biology) had collaborations with scientists from the Department of Molecular Medicine, University of Osaka, Osaka, Japan to study the function of the nuclear orphan receptor RORgamma; with scientists at the Department of Mucosal Immunology, University of Tokyo, Tokyo, Japan to study the role of the nuclear orphan receptor in the immune system; with scientists at the Department of Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel to study the function of p63 in the differentiation of esphageal and tracheal epithelium; with scientists at the Department of Structural Biology and Structural Genomics, Institut de Génétique et de Biologie Moléculaire et Cellulaire, Illkirch, France to study the structure of the RORgamma protein; with scientists at the Department of Biochemistry, University of Western Ontario, London, Canada, to study the role of the transcriptional factor Glis3 in muscle differentiation and its connection to wnt signaling; and with scientists at Organon, Oss, The Netherlands, to analyze agonists and antagonists for the nuclear receptor RTR/GCNF.

Dr. Maria Kadiiska (Laboratory of Pharmacology and Chemistry) has a collaboration with scientists at the Faculty of Medicine, Uppsala University, Uppsala, Sweden; the Heart Research Institute, Sydney, Australia; the Unilever Health Institute, Vlaadrdingen, The Netherland; University of ESSEX, Colchester, UK; and Otto-Von-Guericke University, Magdeburg, Germany, to study biomarkers of oxidative stress.

Dr. Steven Kleeberger (Chief, Laboratory of Respiratory Biology) has a collaboration with researchers at the National Institute of Health and Medical Research, INSERM, Paris to investigate the genetic basis for susceptibility to the effects of coal dust in miners; and with scientists at Johns Hopkins University to study the role of toll-like receptors in respiratory syncytial virus (RSV) infection and disease progression in infants and children. The clinical portion of this study is currently being conducted in Buenos Aires, Argentina.

Dr. Thomas Kunkel (Chief, Laboratory of Structural Biology) has collaborations with scientists at the Graduate School of Engineering Science and Graduate School of Frontier Biosciences at Osaka University, Osaka, Japan; Dept of Medical Biochemistry and Biophysics, Umeå University, Umeå, Sweeden; and the Centro de Biología Molecular Severo Ochoa, Universidad Autónoma, Madrid, Spain, to investigate the functions

and fidelity of human DNA polymerase eta, epsilon and lambda, respectively.

Dr. Larry Lazarus (Laboratory of Computational Biology and Risk Analysis) has collaborations with scientists at the Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Kobe, Japan and the Department of Pharmaceutical Sciences, University of Ferrara, Ferrara, Italy on the synthesis and functional bioactivity of unique opioid mimetic substances with specificity for the d- and m-opioid receptors; and with scientists at the CNRS/INSERM/ULP, Illkirch Cedex, France, to study the inverse agonist properties of d-opioid receptor antagonists.

Dr. Stephanie London (Epidemiology Branch and Laboratory of Respiratory Biology) has collaborations with scientists at the National Institute of Public Health, Cuernavaca, Mexico to study the genetics of childhood asthma in Mexico City; with investigators at the National University in Singapore and the University of Southern California to investigate the relation between diet and the incidence of asthma and chronic bronchitis in a cohort of 63,000 adult Singaporeans of Chinese ethnicity; and with scientists at the Wuhan Public Health and Anti-Epidemic Station and the University of Southern California to study indoor air pollutants in relation to childhood respiratory symptoms.

Dr. Matthew Longnecker (Epidemiology Branch) has collaborations with scientists at the Erasmus University, Rotterdam, The Netherlands to study the effects of exposure to phthalates, bisphenol A, and organophosphate pesticides; and with researchers at the National Institute of Public Health in Cuernavaca, Mexico to examine the relation between maternal serum levels of the androgenic DDT metabolite DDE in relation to anthropometric measures in 200 male newborns in Tapachula, Mexico, where there has been recent, high-level exposure to DDT.

Dr. Heinrich Malling (Laboratory of Molecular Toxicology) has a collaboration with scientists in the Department of Psychology, Section of Neuroscience, University La Sapienza of Rome, Rome, Italy, to study the role of PhiX in neuronal function. Dr. Malling was on the program committee for the 5th International Environmental Mutagen Societies meeting in San Francisco in Sept 2005 and chairman of the Symposium on Mutagenic effects of Nano Particles.

Dr. James Mason (Laboratory of Molecular Genetics) has collaborations with scientists at the Institute of Science History and Technology, Russian Academy of Sciences, St. Petersburg, Russia, to characterize telomere-telomere interactions in *Drosophila*;with scientists at the Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia, to identify and clone a second mutation that increases telomere length in *Drosophila*; and with scientists in the Laboratory of Molecular Cytogenetics, Institute of Cytology and Genetics, Russian Academy of Sciences, Novosibirsk, Russia, to study chromatin structure of *Drosophila* telomeres as it relates to the transcriptional activity of transgenes inserted into telomeric regions.

Dr. Scott Masten (National Toxicology Program) has a collaboration with scientists at the University of Milan, Milan, Italy, to study gene expression in people environmentally exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) as a result of an industrial accident in Seveso, Italy.

Dr. Ronald Melnick (National Toxicology Program) has a collaboration with scientists at the Information Technologies in Society, Zurich, Switzerland to study dosimetry modeling of rats and mice exposed to radiofrequency radiation in reverberation chambers. Dr. Melnick also participated in meetings of the International Advisory Committee and the Research Coordination Committee of

WHO's International Electromagnetic Fields Project. These were held in Geneva, Switzerland in June 2003.

Dr. B. Alex Merrick (National Center for Toxicogeniomics) was an invited speaker at the IPCS Workshop on Toxicogenomics and the Risk Assessment of Chemicals For the Protection of Human Health, Berlin, Germany, November 17-19, 2003; and at International Meetings of the Human Proteome Organization, June 17-19, 2003 and April 21-22, 2004, Bethesda, MD.

Dr. David Miller (Laboratory of Pharmacology and Chemistry) has collaborations with scientists at the Department of Pharmacology & Toxicology, Nijmegen Center for Molecular Life Sciences, Nijmegen, The Netherlands to characterize the regulation of xenobiotic export pumps in renal proximal tubule; and with scientists at the Institute for Pharmacy and Biotechnology, University of Heidelberg, Heidelberg, Germany to characterize the role of drug export pumps in blood-brain barrier function.

Dr. Fred Miller (Office of Clinical Research) co-chaired with Dr. Lisa Rider (Office of Clinical Research) the International Workshop on Myositis Outcome Measures and Clinical Trial Design Issues. Dr. Miller is also a member of The International Myositis Collaborative Study Group with scientists from Montreal, Canada; Santiago, Chile; Guatemala City, Guatemala; Mexico City, Mexico; Guadalajara, Mexico; Aachen, Germany; Nijmegen, The Netherlands; Warsaw, Poland; Glasgow, Scotland; Barcelona, Spain; Stockholm, Sweden; New Delhi, India; Tokyo, Japan; and Seoul, South Korea which has been organized to collect standardized data and specimens on myositis patients.

Dr. Yuji Mishina (Laboratory of Reproductive and Developmental Toxicology) has a collaboration with scientists at the Brain Science Institute, RIKEN, Saitama, Japan
Group to uncover the function of bone morphogenic protein signaling in brain development.

Dr. Masahiko Negishi (Laboratory of Reproductive and Developmental Toxicology) organized a Symposium for the Nagano Society for the Regulation of Gene Expression
Nagano, Japan, November 2003.

Retha Newbold (Laboratory of Molecular Toxicology) worked with DES Action International providing scientific information on DES exposure and animal models and with the World Wildlife Fund reviewing proposals and providing scientific information on endocrine disrupting chemicals. Ms. Newbold also has collaborations with scientists at the University of Rome "La Sapienza," Italy to study effects of environmental estrogens on development of bone tissue; with scientists at the University of Karlsruhe, Germany to study effects of genistein and daidzein on the developing reproductive tract; with scientists at the University Hospital of Copenhagen, Denmark to study effects of genistein on the developing ovary; with scientists at Bar-ilan University, Ramat-Gan, Israel to test a natural antioxidant found in spinach for hormonal activity; and with scientists at the Okazaki National Research Institute, Japan to study effects of endocrine disrupting chemicals on the developing reproductive tract using fetal or neonatal mouse models.

Dr. John O'Bryan (Laboratory of Signal Transduction) has a collaboration with scientists at the Max-Planck Institute of Neurobiology, Munich-Martinsried, Germany; to study the involvement of the intersectin scaffold in the endocytosis of Eph receptor tyrosine kinases and their membrane ligands the ephrins.

Dr. Richard Paules (National Center for Toxicogeniomics) was an invited speaker at the EU-US Workshop on Molecular Signatures of DNA Damage Induced Stress Responses, Cortona, Italy, September 24-October 4, 2003; and met with scientists at Gifu University, Gifu-shi, Japan, January 27-31, 2004, to discuss the most recent advances in technologies and applications of genomics to toxicological problems as well as strategic planning for predictive toxicogenomics and translation to benefits for human health.

Dr. John Pritchard (Chief, Laboratory of Pharmacology and Chemistry) has collaborations with scientists at the Universitaet Goettingen in Goettingen, Germany to study the evolution of xenobiotic transporter gene structure and function; and with scientists at Mahidol University, Bangkok, Thailand to study the roles of two human transporters (hOAT1 and hOAT3) in the elimination of stevioside, a natural non-caloric sweetener, and its metabolites.

Dr. James W. Putney (Laboratory of Signal Transduction) is currently the Newton-Abraham Visiting Professor in Medical, Biology and Chemical Sciences in the Department of Physiology, Oxford University, Oxford, England, were he is studying the electrophysiology of capacitative calcium entry in cells. Dr. Putney will give the annual Newton-Abraham Lecture in Medical and Chemical Sciences at Oxford, England, Spring 2004.

Dr. Michael Resnick (Laboratory of Molecular Genetics) organized an international meeting "Functional consequences of TP53 mutations" to be held at IARC, in Lyon, France, from June 30 to July 3, 2003 to explore the importance of various p53 functional mutations and their relevance to cancer as well as to develop further the existing p53 database as IARC.

Dr. John Roberts (Laboratory of Molecular Carcinogenesis) has a collaboration with scientists at the First Department of Surgery, Osaka City University, Osaka, Japan to study the role of the PI3K/Akt pathway in the adhesion and spreading of a human cell gastric carcinoma.

Dr. Dale Sandler (Chief, Epidemiology Branch) has a collaboration with researchers at the Prague Institute of Advanced Studies, Prague, Czech Republic and the Center for Epidemiological Studies, Pribram, Czech Republic to study cancer risk among underground uranium miners in the Czech Republic.

Dr. Roel M. Schaaper (Laboratory of Molecular Genetics) has collaborations with scientists at the Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland to study mechanisms of DNA replication fidelity; and with scientists in the Department of Genetics, St. Petersburg State University, St. Petersburg, Russia to study base analog detoxification by molybdenum-dependent activities, research that is supported by a Collaborative Linkage Grant awarded by NATO.

Dr. William Stokes, (National Toxicology Program and Director, NTP Interagency Center for the Evaluation of Alternative Toxicological Methods) in collaboration with the European Centre for the Validation of Alternative Methods designed and initiated a multi-laboratory international study to evaluate the usefulness of cytotoxicity data from the BALB/c 3T3 Neutral Red Uptake (NRU) and the Normal Human Keratinocyte (NHK) NRU assays for estimating the acute oral toxicity potential of test substances; the Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), ECVAM; and NICEATM are collaborating to conduct a

validation study on three in vitro test methods for assessing dermal irritation; in March 2003, ICCVAM and ECVAM made joint presentations to a subcommittee of the OECD Good Laboratory Practice (GLP) Working Group on the need for further international guidance on the application of GLPs to in vitro toxicological testing. International Conference on Validation and Regulatory Acceptance was held in Stockholm, Sweden, from March 6-8, 2002 released at document entitled, "The Development, Validation and Regulatory Acceptance of New and Updated Test Methods in Hazard Assessment" in October of 2003. Dr. Stokes also participated in the ECVAM Workshops on Strategies to Replace In Vivo Acute Systemic Toxicity Testing, held September 15-18, 2003 and on Validation Principles and Approaches for Toxicogenomics-Based Test Systems, held December 11-12, 2003.

Dr. Kenneth Tomer (Laboratory of Structural Biology) served as an expert in separations for the International Human Proteome Organization Consortium, coordinating development of microfluidic/mass spectrometry approaches to proteomics.

Dr. Bennett Van Houten (Laboratory of Molecular Genetics) has collaborations with scientists in the Department of Molecular Genetics, Cancer Research Institute, Slovak Academy of Sciences, Vlarska Bratislava, Slovakia, to study the bacterial UvrABC DNA repair system; and with scientists at the Novosibirsk Institute of Bioorganic Chemistry, Siberian Branch of Russian Academy of Sciences, to study DNA contact sites of nucleotide excision repair proteins. Dr. Van Houten was an invited speaker at the Genetic Toxicology Gordon Research Conference, Oxford, UK.

Dr. Clarice Weinberg (Chief, Biostatistics Branch) is involved in a collaboration with a reproductive genetic epidemiologist at McGill University, Montreal, Canada, who is studying genetic effects on intra-uterine growth retardation, on gestational survival, and on childhood cancers; and is a co-investigator of a multinational research project on a birth defect, oral clefting (cleft lip and cleft palate) with scientists at the University of Bergen, Bergen, Norway and with scientists in Denmark.

Dr. Michael Waters (National Center for Toxicogeniomics) has a collaboration with scientists at the European Bioinformatics Institute (EBI), Hinxton, United Kingdom, to develop international toxicogenomic database standards and has addressed the technical problems involved in microarray and toxicology data upload, the demand for standardizing data storage and exchange formats, the requirement for identifying minimal descriptors to represent toxxicogenomics experiments, the definition of parameters that assess and record data quality and the creation of standardized nomenclature and ontologies to describe biological data.

Dr. Samuel H. Wilson (Laboratory of Structural Biology and Deputy Director) was an organizer and keynote speaker at the EU-US Workshop on Molecular Signatures of Stress-Induced DNA Damage Responses held at Centro Convegni S. Agostino, Cortona Sviluppo, Cortona, Italy, September 26-30, 2003; organized and chaired a session at the First US-EU DNA Repair Meeting: Endogenous Stress, held at National Conference Center, Leesburg, VA, October 14-18, 2003; and organized the 2nd Japan-U.S. DNA Repair Meeting, J.W. Marriott Ihilani Resort, - Ko Olina, Hawaii, June 4-8, 2004.

Dr. Jerry Yakel (Laboratory of Neurobiology) had a collaboration with scientists at Biophysics Sector and INFM Unit, International School for Advanced Studies (SISSA), Trieste, Italy to study Ca^{2+} regulation of nicotinic acetylcholine receptor channels in rat hippocampal neurons.

Dr. Darryl Zeldin (Laboratory of Respiratory Biology) had a collaboration with scientists at the University of Bochum and St. Josef Hospital, Bochum, Germany to study variants in the human *CYP2J2* gene and with scientists at the Tongji Medical Center, Tongji, Peoples Republic of China to study the regulation of endothelial nitric oxide synthase (eNOS) by endothelium-derived hyperpolarizing factors (EDHF) and the relevant signaling pathways involved. Dr. Zeldin was the organizer of a Symposium on Eicosanoids in the Cardiovascular System, International Winter Eicosanoid Meeting (March 2004).

NATIONAL TOXICOLOGY PROGRAM
UPDATE
MAY 2004

NTP Contributions Receive Society of Toxicology Awards

Dr. Kenneth Olden, Director of the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP) was presented the Public Communications Award at the 43rd Annual Meeting of the Society of Toxicology (SOT) on March 21, 2004, in Baltimore, Maryland. The citation read: "His exemplary leadership of the NIEHS has fostered a strong human disease outcome focus to guide environmental health research and has served as a model for effective integration and focusing of basic research on human and environmental health issues . . . His ability to reach all audiences and tireless commitment to bettering the health of the public-at-large makes him one of our discipline's most effective advocates and communicators." Dr. Olden is a Fellow of the Academy of Toxicological Sciences and has championed a strong relationship between the NIEHS and SOT through many initiatives, including teacher training workshop, underrepresented minority education programs and NIEHS-sponsored symposia at SOT annual meetings.

Toxicological Sciences Best Paper Award

Dr. Abraham Nyska of the Laboratory of Experimental Pathology, NIEHS, is a co-author on the paper entitled *Inhaled Environmental Combustion Particles Cause Myocardial Injury in the Wistar Kyoto Rat* (*ToxSci* 71:237-245, 2003) that was selected by the Board of Publications to receive the SOT Award for Best Paper in Toxicological Sciences published during the past year. The paper presents comprehensive work showing cardiac effects due to particulate matter (PM) in rats under experimental conditions relevant to human exposure. The authors comprise a team of scientists from the NIEHS, the Environmental Protection Agency (Drs. Urmila P. Kodavanti, Allen D. Ledbetter, Mette C. Schladweiler and Daniel L. Costa), the Harvard University School of Public Health (Drs. Russ Hauser and David C. Christiani) and Pathology Associates (Dr. Carolyn F. Moyer). With expertise in inhalation toxicology, cardiac pathology and occupational health, the scientists worked collaboratively on characterization of the particles' composition and extent of myocardial injury and on identifying the potential causative agent(s). Zinc was the predominant metal in the particles and the findings suggest that particle-associated zinc may play a role in myocardial damage. The paper provides the first clear evidence of the effect of PM on the heart, and provides supportive evidence for previous epidemiological associations between exposure to ambient PM and cardiovascular morbidity.

NTP Vision Activities

The NTP sponsored a public meeting to receive comment on the vision and elements for a roadmap at the National Library of Medicine's Lister Hill Auditorium on January 29, 2004. A panel conposed of members of the three working groups for the vision (see below) received the comments and provide remarks to the NTP. The NTP Board of Scientific Counselors Working Group for the Vision met with invited constituents and experts to discuss input and strategies for implementing the road map for the NTP Vision in Baltimore on March 25, 2004 at the time of the SOT. The Board Working Group is one of three work groups that includes an internal NIEHS Working Group and the NTP Executive Committee Working Group. The work groups have been charged independently to make reports on the input for the roadmap. The NTP will provide opportunity for public input on the vision and elements for the roadmap at the upcoming NTP Board of Scientific Counselors meeting in June (see below) and will hold a retreat this summer to complete the roadmap. The roadmap rollout for the vision is expected to be in the fall.

NTP Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM)

Federal Agency Responses to ICCVAM Test Recommendations

The Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM) under NICEATM, coordinates the development, validation, acceptance and harmonization of new, alternative and revised toxicological test methods. The NTP published a notice in the *Federal Register* (Vol. 69, No. 47, pages 11448 – 11449) on March 10, 2004, announcing the availability of Federal agency responses to ICCVAM test recommendations for the revised Up-and-Down Procedure for determining acute oral toxicity and *in vitro* methods for assessing acute systemic toxicity

Center for the Evaluation of Risks to Human Reproduction (CERHR)

CERHR Expert Panel to Evaluate Acrylamide

The CERHR will hold an expert panel evaluation of the potential reproductive and developmental hazards associated with exposure to acrylamide on May 17-19, 2004, at the Holiday Inn Old Town Select in Alexandria, Virginia. This meeting is open to the public with opportunity for public comment. Sections 1-4 of the draft expert panel report on acrylamide are now available electronically on the CERHR web site (http://cerhr.niehs.nih.gov) along with details about the meeting.

CERHR Expert Panel Report on Fluoxetine Available

The Fluoxetine Expert Panel Report is available on the CERHR web site. Public comments on the report are requested [*Federal Register* April 29, 2004 [Vol. 69, No. 83] and will be used by the NTP in preparing the NTP brief - the program's opinion on the potential reproductive and/or developmental hazard to humans associated with exposure to fluoxetine. A 12-member expert panel composed of scientists from the federal government, universities, and private companies conducted the evaluation of the reproductive and developmental toxicities of fluoxetine hydrochloride on March 3-5, 2004 in Alexandria, Virginia.

NTP Board of Scientific Counselors

The NTP Board is set to meet on June 29, 2004, at the NIEHS. Tentatively on the agenda for discussion are the NTP Vision for the 21st Century, including a report on recommendations for the roadmap from the three external groups for the NTP vision (working groups of the NTP Board, NTP Executive Committee, and the NIEHS), recommendations for nominations to the 11th Report on Carcinogens by the NTP Board Report on Carcinogens Subcommittee, actions on draft NTP Technical Reports by the Technical Reports Review Subcommittee, and a report by a working group of the NTP Board on statistical methods for evaluation of findings in phototoxicology studies. Additional items may be added as the agenda is finalized.

NTP Satellite Symposium on Hepatic Pathology

The NTP will sponsor a satellite symposium on Saturday, June 12, 2004, before the start of the Society of Toxicologic Pathology Annual Meeting. The annual meeting is scheduled for June 13-17, 2004, at the Grand America Hotel in Salt Lake City, Utah. The format for the satellite symposium, which includes audience participation, will be the same as the one used at the 2004 meeting in Savannah. Audience response units (for audience voting and instant display of the results) will be provided during the satellite symposium. The emphasis for the cases will be hepatic lesions although non-hepatic lesions will also be included.